

**REMARKS**

Claims 1, 3-7, 9, 11, 12, 14-16, 18-25 and 27 and currently stand rejected.

**Rejection of Claims 1, 3-7, 9, 11, 12, 14-16, 18-25 and 27 under 35 U.S.C. §103(a)**

Claims 1, 3-7, 9, 11, 12, 14-16, 18-25 and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Franks, U.S. Patent No. 4,359,641 in view of Costa and Puseljic.

Applicant believes that the instant claims are not obvious over Franks or any of the cited references alone or in combination.

The Examiner asserts that Franks teaches a scintillator material having a fluorescent emission of 485 nm. In support of this assertion, the Examiner cites Table 1, line 9 of Franks. Further, the Examiner states that "[e]ven if the solid state fluorescence emission of Coumarin 540 were outside the range of 460-500 nm, this difference would not be significant enough to make the instant claims patentably distinguishable from Franks, because the emission wavelength is an inherent property of the compound."

Applicant submits that the assertion that "emission wavelength is an inherent property of the compound" must be considered in view of Table 1 of Franks which shows that emission characteristics of Coumarin 540 vary with solvent identity. Figures 2 and 3 of Franks also show differences in emission dependent on solvent identity. Thus, it appears that the Franks reference teaches that fluorescence characteristics of Coumarin 540 vary and depend on the environment.

Further, no teaching is apparent in the Franks reference relating to fluorescent emission of a fluorescent material incorporated in a solid body or solid state member as described in independent claims 1, 9 and 16.

Applicant notes that where "inherency" of a property is alleged, the Examiner must provide rationale or evidence tending to show inherency. (MPEP 2112) "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original, cited in MPEP 2112)

In view of the variability of fluorescence characteristics taught by Franks, Applicant respectfully requests evidence to support a rejection based on inherency if the Examiner intends to maintain the rejection.

Applicant notes that the Puseljic et al reference also appears limited to teaching characteristics of particular dyes in a single liquid solvent, 1-phenylnaphthalene. Applicant submits that neither the Franks reference nor the Puseljic et al reference provide a teaching of emission characteristics of coumarin dyes in anything other than liquid scintillation materials.

Further, the cited Costa et al reference does not appear to add to any factual analysis of the present claims since this patent also does not describe a solid state member having a fluorescent emission in the range of 460-500 nm.

The cited references, alone or in combination, do not appear to teach all aspects of independent claims 1, 9 and 16 and no *prima facie* case of obviousness is established. Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

Regarding independent claim 25, the examiner asserts that the "combined teaching of Franks and Birks teaches a liquid scintillator cocktail comprising Coumarin dye as first scintillator material and PPO or DPA as second scintillator material."

A liquid scintillation cocktail according to claim 25 has a fluorescent emission in the range of 460-500 nm, allowing for detection by both CCD and PMT devices. It is submitted that the subject matter of claim 25 is not obvious over the combined teachings of Franks and Birks since neither Franks nor Birks, nor a combination of these references, provides information that a liquid scintillation cocktail comprising Coumarin dye as first scintillator material and PPO or DPA as second scintillator material" has a fluorescent emission in the range of 460-500 nm. As detailed above, Table 1 of Franks indicates that scintillator systems including different solvents and scintillators have widely varying fluorescence emission characteristics. Applicant submits that one of skill in the art would have no guidance from the cited references in regard to the particular combination described in claim 25 having a fluorescent emission in the range of 460-500 nm since the references teach variability of fluorescent emission characteristics. Therefore, the cited references, alone or in combination, do not appear to teach all aspects of independent

claim 25 and no *prima facie* case of obviousness is established. Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

In view of Applicant's belief in the allowability of instant independent claims 1, 9, 16 and 25 over the cited references, Applicant submits that the dependent claims 3-7, 11, 12, 14-15, 18-24 and 27 are likewise allowable. Applicant submits that these dependent claims encompass patentable subject matter separate from the dependence on allowable base claims. Applicant reserves the right to make such remarks of record in the event that the rejection is maintained.

**Summary**

Claims 1, 3-7, 9, 11, 12, 14-16, 18-25 and 27 are pending in the present application. Applicant believes the claims to be in condition for allowance and respectfully requests reconsideration and allowance of the claims.

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Respectfully submitted,

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